Attorney's Docket No.: 28955.4020

REMARKS

Claims 1-10 and 12-14, as amended, remain herein. Claim 11 has been cancelled. Claim 1 has been amended. New claims 12-14 have been added. Support for the amendments and the new claims may be found throughout the specification (see, e.g. original claim 11; compounds AN1 to AN5, AN7, AN11, AN14 and AN16 at pages 23-26 of the specification; and pages 5-6 of the specification).

Applicants' claim 1 recites an anthracene derivative represented by following general formula (1):

$$Ar \xrightarrow{(X)_a} Ar' \qquad (1)$$

wherein Ar is selected from the group consisting of

Serial No.: 10/519,934 Attorney's Docket No.: 28955.4020

$$\bigcap_{\mathbb{R}^1 \ \mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^1 \ \mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^2 \ \mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^2 \ \mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^2 \ \mathbb{R}^2}, \quad \bigcap_{\mathbb{R}^2 \ \mathbb{R$$

Ar' is selected from the group consisting of

Attorney's Docket No.: 28955.4020

X represents a substituted or unsubstituted alkyl group having 1 to 6 carbon atoms, or a substituted or unsubstituted aryl group selected from the group consisting of phenyl, 1-naphthyl, 2-naphthyl, o-tolyl, m-tolyl, and p tolyl and having 6 to 50 nuclear carbon atoms, **a** and **b** each represent an integer of 0 or 1 and when a plurality of groups represented by X are present, they may be the same with or different from each other, and **n** represents an integer of 1 or 2 and, when **n** represents 2, a plurality of groups represented by:

$$(x)_{b}$$

may be a same with or different from each other; with proviso that when Ar represents a group represented by a following general formula (3):

Attorney's Docket No.: 28955.4020

wherein R^1 and R^2 each represent hydrogen atom, a substituted or unsubstituted alkyl group having 1 to 6 carbon atoms, a substituted or unsubstituted alkoxyl group having 1 to 6 carbon atoms or a substituted or unsubstituted phenyl group,

(i) Ar' represents an aryl group represented by following general formula (4):

wherein Y represents a substituted or unsubstituted aromatic condensed cyclic residue group having 10 or more nuclear atoms or a substituted or unsubstituted aromatic non-condensed cyclic residue group having 12 or more nuclear atoms, R represents a substituted or unsubstituted alkyl group having 1 to 50 carbon atoms, a substituted or unsubstituted alkoxyl group having 1 to 50 carbon atoms, a substituted or unsubstituted aryl group having 6 to 50 nuclear carbon atoms, a substituted or unsubstituted aromatic heterocyclic group having 5 to 50 nuclear atoms, a substituted or unsubstituted aryloxyl group having 5 to 50 nuclear atoms or a substituted or unsubstituted aryloxyl group having 5 to 50 nuclear atoms or a substituted or unsubstituted aryloxyl group having 5 to 50 nuclear atoms, and m represents an integer of 0 to 4,

or

(ii) at least one of **a** and **b** does not represent 0, and X represents a substituted or unsubstituted alkyl group having 4 to 50 carbon atoms, a substituted or unsubstituted alkoxyl group having 4 to 50 carbon atoms, a substituted or unsubstituted cycloalkyl group having 5 to 50 carbon atoms, a substituted or unsubstituted aralkyl group having 6 to 60 carbon atoms, a

Attorney's Docket No.: 28955.4020

substituted or unsubstituted aryl group having 10 to 50 nuclear carbon atoms, a substituted or unsubstituted aromatic heterocyclic group having 10 to 50 nuclear atoms, a substituted or unsubstituted aryloxyl group having 5 to 50 nuclear atoms or a substituted or unsubstituted arylthio group having 5 to 50 nuclear atoms, but when R¹ and R² are both methyl or both ethyl, a is 1 and b is 0, and X is t-butyl, Ar' is not 2-naphthyl, and

when Ar represents a group represented by a following general formula (3'):

wherein R^1 and R^2 are as defined above, Ar' represents an aryl group represented by the foregoing general formula (4), or a β -naphthyl group.

- Claims 6 and 10 were rejected under 35 U.S.C. § 112, second paragraph. Claims
 6 and 10 are amended to moot this rejection.
- 2. Claims 1-7 and 9-11 were rejected under 35 U.S.C. § 102(e) over Xie et al. U.S. Patent Application 2003/0215667. The Office Action alleged that applicants' claims read on Xie's compounds Ia-3, 4, 7, 8, 27, 28, 31, 32, 34, 36, and 48 and Ib-3, 4, 7, 8, 11, 12, 14, 16, 18, 21, 22, and 24.

Applicants' claim 1 recites that when Ar represents a group represented by a following general formula (3):

Attorney's Docket No.: 28955.4020

(i) Ar' represents an aryl group represented by following general formula (4):

$$\begin{array}{c} Y \\ (8)_{m} \end{array}$$

or

(ii) at least one of **a** and **b** does not represent 0, but when R¹ and R² are both methyl or both ethyl, a is 1 and b is 0, and X is t-butyl, Ar' is not 2-naphthyl.

Xie's formula (I) discloses a fluorenyl in the Ar position but does not require that either applicants' claimed Ar' group is represented by general formula (4) or that the anthracene ring is substituted (a and b is not 0). When a compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. Ex parte A, 17 USPQ2d 1716 (BPAI 1990); MPEP 2131.02. The species is anticipated only if one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula. See In re Petering, 301 F.2d 676 (CCPA 1962); MPEP 2131.02. Furthermore, one may look to the preferred embodiments to determine which compounds can be anticipated. Id.

Attorney's Docket No.: 28955.4020

None of Xie's compounds meets the limitations of applicants' claim 1. Xie's compounds Ia-3, 4, 27, 28 and 34 include a phenyl group at the Ar' position but phenyl is not one of applicants' claimed Ar' groups. In addition, Xie's compounds Ia-31, 32 and 48 include a diphenyl amino group at the Ar position but diphenyl amino is not one of applicants' claimed Ar groups. Furthermore, Xie's compounds Ia-7, 8 and 36 include a 2-naphthyl at the Ar' position while applicants' claim 1 requires that when R¹ and R² are both methyl or both ethyl, a is 1 and b is 0, and X is t-butyl, Ar' is not 2-naphthyl.

In addition, Xie's compounds Ib-3, 4, 7, 8, 11, 12, 14, 16, 18, 21, 22, and 24 disclose a group R⁵ at the Ar' position with the following chemical structure:

$$R^6$$
 R^7 R^1 R^2

Applicants' claimed Ar' is selected from the group consisting of

Attorney's Docket No.: 28955.4020

;

Thus, Applicants' claimed Ar' group is distinct from Xie's group R⁵. Thus, Xie does not disclose all limitations of applicants' claims, and, therefore, it is not adequate basis for a rejection under § 102(e). Applicants respectfully request reconsideration and withdrawal of this rejection.

3. Claims 1-7 and 9-11 were rejected under 35 U.S.C. § 102(b) over Ishida et al. EP 1,221,434. The Office Action alleged that applicants' claims read on Ishida's compounds A-28, A-30, A-33, B-28, B-30, B-32, C-36, C-37, C-38, C-41, C-42, C-45, D-23, D-24, D-25, D-27, D-28, F-40, G-17, I-10, I-23, I-25, I-27, L-24, L-25, M-15, M-18, M-21, N-15, P-24, P-25, P-27, Q-10, Q-24, Q-27, and Q-28.

Ishida discloses compounds including the following group at the Ar position.

None of Ishida's compounds A-28, A-30, A-33, B-28, B-30, B-32, C-36, C-37, C-38, C-41, C-42, C-45, D-23, D-24, D-25, D-27, D-28, F-40, G-17, I-10, I-23, I-25, I-27, L-24, L-25, M-15, M-18, M-21, N-15, P-24, P-25, P-27, Q-10, Q-24, Q-27, and Q-28, however, discloses applicants' claimed Ar' group.

Attorney's Docket No.: 28955.4020

Ishida formulae (5) and (6) disclose a broad genus and some of applicants' claimed compounds are species within that genus. When a compound is not specifically named, but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can be found only if the classes of substituents are sufficiently limited or well delineated. Ex parte A, 17 USPQ2d 1716 (BPAI 1990); MPEP 2131.02. The species is anticipated only if one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula. See In re Petering, 301 F.2d 676 (CCPA 1962); MPEP 2131.02. Furthermore, one may look to the preferred embodiments to determine which compounds can be anticipated. Id.

Applicants' claimed formula (1) does not read on any of Ishida's exemplified compounds. In addition, unlike Ishida, applicants' claim 1 requires that when Ar is the compound of formula (3), Ar' represents an aryl group represented by following general formula (4):

wherein Y represents a substituted or unsubstituted aromatic condensed cyclic residue group having 10 or more nuclear atoms or a substituted or unsubstituted aromatic non-condensed cyclic residue group having 12 or more nuclear atoms, or (ii) at least one of **a** and **b** does not represent 0, and X represents a substituted or unsubstituted alkyl group having 4 to 50 carbon atoms, a substituted or unsubstituted alkoxyl group having 4 to 50 carbon atoms, a substituted or unsubstituted cycloalkyl group having 5 to 50 carbon atoms, a substituted or unsubstituted

Attorney's Docket No.: 28955.4020

aralkyl group having 6 to 60 carbon atoms, a substituted or unsubstituted aryl group having 10 to 50 nuclear carbon atoms, a substituted or unsubstituted aromatic heterocyclic group having 10 to 50 nuclear atoms, a substituted or unsubstituted aryloxyl group having 5 to 50 nuclear atoms or a substituted or unsubstituted arylthio group having 5 to 50 nuclear atoms.

As stated in applicants' specification:

As the result of intensive studies to achieve the above object, it was found that a specific anthracene derivative represented by general formula (1) below suppressed crystallization, had a high glass transition temperature and, when the derivative was used as the light emitting material or the hole transporting material of an organic EL device, provided a great efficiency of light emission and enabled to exhibit uniform light emission even at high temperatures. The present invention has been completed based on this knowledge.

See page 4, lines 14-21 of the specification. See also Table 1 at page 59 of the specification showing the superior properties of applicants' claimed compounds compared to the compounds of Comparative Examples 2 and 4 which are similar to Ishida's compounds.

Thus, Ishida does not disclose all limitations of applicants' claims, and, therefore, it is not an adequate basis for a rejection under § 102(b). Applicants respectfully request reconsideration and withdrawal of this rejection.

4. Claim 8 was rejected under 35 U.S.C. § 103(a) over Hosokawa et al. EP 1,167,488 in view of Ishida. Claim 8 depends from claim 4 which depends from claim 1.

As discussed above, Ishida does not disclose all the limitations of applicants' claim 1. Hosokawa does not teach or suggest what is missing from Ishida. Hosokawa does not disclose all the limitations of claim 1 (see applicants' Amendment filed September 25, 2007).

Attorney's Docket No.: 28955.4020

Ishida and Hosokawa disclose nothing that would have suggested applicants' claimed

invention to one of ordinary skill in the art. Furthermore, there is no disclosure or teaching in

Ishida, Hosokawa, or otherwise in this record that would have suggested the desirability of

modifying any portions thereof effectively to anticipate or suggest applicants' presently claimed

invention. For all the foregoing reasons, applicants respectfully request reconsideration and

withdrawal of this rejection.

Accordingly, this application is now fully in condition for allowance and a notice to

that effect is respectfully requested. The PTO is hereby authorized to charge/credit any fee

deficiencies or overpayments to Deposit Account No. 19-4293 (Order No. 28955.4020). If

further amendments would place this application in even better condition for issue, the

Examiner is invited to call applicants' undersigned attorney at the number listed below.

Respectfully submitted,

STEPTOE & JOHNSON LLP

Date: June 16, 2008

Roger W. Parkhurst

Reg. No. 25,177 Houda Morad

Reg. No. 56,742

STEPTOE & JOHNSON LLP 1330 Connecticut Avenue, NW

Washington, DC 20036 Tel: 202-429-3000

Fax: 202-429-3902

26